What is claimed is:

1. Apparatus for measuring characteristics of a bit stream of binary pulses comprising

control means for defining a window comparator, and

logic means for accumulating event counts of the bit stream pulses falling

within points inside the window comparator during durations of the binary pulse bit

stream and drawing eye diagrams therefrom defining the bit stream characteristics.

2. The apparatus for measuring characteristics of a bit stream of binary pulses

set forth in claim 1 wherein the control means comprises

programmable means for establishing an array of columns and rows defining

the points for accumulating counts of pulse voltage levels at time offsets during the

duration times and for creating a voltage threshold window that moves between a

minimum and maximum voltage with changes of rows of the array.

3. The apparatus for measuring characteristics of a bit stream of binary pulses

set forth in claim 2 wherein the logic means comprises

logic circuitry for detecting voltage levels of the binary pulses occurring at

various time offsets of the bit stream when the pulse voltage levels are within the

voltage threshold window at each row and column point of the array.

4. The apparatus for measuring characteristics of a bit stream of binary pulses

set forth in claim 3 wherein the logic means comprises

first counter means for accumulating counts of the detected binary pulse

voltage levels at the time offsets during each duration part of the binary pulse bit stream

in a column and row point of the array.

5. The apparatus for measuring characteristics of a bit stream of binary pulses

set forth in claim 4 wherein the logic means comprises

second counter means for defining duration times of the bit stream of binary

pulses to accumulate the counts of the detected binary pulse voltage levels falling

within the voltage threshold window at each point of the array.

6. The apparatus for measuring characteristics of a bit stream of binary pulses

set forth in claim 5 further comprising

apparatus for displaying the array column and row points of accumulated

time and voltage counts as an eye diagram defining characteristics of the bit stream of

binary pulses.

7. Apparatus for measuring characteristics of a bit stream of binary pulses

comprising

control means for defining a window comparator of an array of columns and

rows defining points for accumulating voltage counts of the binary pulse bit stream at

time offsets during defined durations of the binary pulse bit stream, and

apparatus for creating a voltage threshold window that moves between

minimum and a maximum voltage levels with each row of the array and for

accumulating counts of voltage levels of the binary pulses occurring at the time offsets

of the bit stream during a duration time when the pulse voltage levels are within the

voltage threshold window at each row and column point of the array and displaying the

array column and row points of the accumulated time and voltage counts as an eye

diagram defining characteristics of the bit stream of binary pulses.

8. Apparatus for measuring characteristics of a bit stream of binary pulses

comprising

first control means for defining a window comparator of an array of columns and rows defining points for accumulating event counts at time offsets during defined duration times of the binary pulse bit stream,

5   second control means for creating a voltage threshold window that moves between a minimum and maximum voltage threshold with each row of the array,

logic means for detecting voltage levels of the binary pulses occurring at time offsets of the bit stream when the pulse voltage levels are within the voltage threshold at each row and column point of the array,

10   first counter means for accumulating counts of the detected binary pulse voltage levels at time offsets during each defined duration time of the binary pulse bit stream in a column and row point of the array,

second counter means for determining duration of periods of the binary bit stream in which to accumulate the detected binary pulse voltage levels at each point of

15   the array, and

monitor apparatus for displaying the array column and row points of the accumulated event counts as an eye diagram defining characteristics of the bit stream of binary pulses.

9. A method for determining characteristics of a bit stream of binary pulses

20   comprising the steps of

defining a window comparator, and

accumulating event counts of the bit stream pulses at time offsets during defined duration times of the binary pulse bit stream at points inside the window

comparator and drawing an eye diagram therefrom defining the bit stream pulse characteristics.

10. The method for determining characteristics of the bit stream of binary pulses set forth in claim 9 wherein the window comparator defining step comprises the step of establishing an array of columns and rows defining the points for accumulating the event counts at time offsets during the defined duration times.

11. The method for determining characteristics of the bit stream of binary pulses set forth in claim 10 wherein the window comparator defining step comprises the step of creating a voltage threshold window that moves with respect to a minimum and maximum voltage threshold wherein the voltage threshold window changes with respect to the rows of the array.

12. The method for determining characteristics of the bit stream of binary pulses set forth in claim 11 wherein the event count accumulating step comprises the step of detecting voltage levels of the binary pulses occurring at the time offsets of the bit stream when the pulse voltage levels are within the voltage threshold window at each row and column point of the array.

13. The method for determining characteristics of the bit stream of binary pulses set forth in claim 12 wherein the event count accumulating step comprises the step of accumulating counts of the detected binary pulse voltage levels at the time offsets during each duration part of the binary pulse bit stream in a column and row point of the array.

14. The method for determining characteristics of the bit stream of binary pulses set forth in claim 13 wherein the event count accumulating step comprises the step of

displaying the array column and row points of accumulated event counts as an eye diagram defining characteristics of the bit stream of binary pulses.

15. A method for determining characteristics of a bit stream of binary pulses comprising the steps of

defining a window comparator of an array of columns and rows defining points for accumulating event counts of the binary pulse bit stream at time offsets during defined durations of the binary pulse bit stream,

creating a voltage threshold window that moves between a minimum voltage and a maximum at each row of the array, and

accumulating counts of voltage levels of the binary pulses occurring at time offses of the bit stream during a duration time when the pulse voltage levels are within the voltage threshold window at each row and column point of the array and displaying the array column and row points of the accumulated event counts as an eye diagram defining characteristics of the bit stream of binary pulses.

16. A method for determining characteristics of a bit stream of binary pulses comprising the steps of

defining a window comparator of an array of columns and rows defining points for accumulating event counts at time offsets during defined duration times of the binary pulse bit stream,.

creating a voltage threshold window that moves between defined voltage levels at each row of the array,

detecting voltage levels of the binary pulses occurring at the time of the bit stream when the pulse voltage levels are within the voltage threshold window at each row and column point of the array,

accumulating counts of the detected binary pulse voltage levels at the time offsetss in a column and row point of the array, and

displaying the array column and row points of the accumulated time and voltage counts as an eye diagram defining characteristics of the bit stream of binary pulses.